LION7 Submission 50

Update information
Update authors
Withdraw

If you want to **change any information** about your paper or withdraw it, use links in the upper right corner.

For all questions related to processing your submission you should contact the conference organizers. Click here to see information about this conference.

All **reviews sent to you** can be found at the bottom of this page.

Paper 50	
Title:	Generating Training Data for Learning Linear Composite Dispatching Rules for Scheduling
Paper:	PDF
Track:	LION7
Author keywords:	Scheduling Heuristics Machine Learning
EasyChair keyphrases:	training data (170), dispatching rule (146), cma cma cma (126), opt cma (120), linear ordinal regression model (120), job shop scheduling (110), ranking scheme (100), ranking strategy (80), problem space p1 (79), cma cma (70), various preference set (63), cma cma mwr (63), problem space p2 (63), problem space (55), box plot (50), learning algorithm (50), optimal dispatch (50), preference set (50), training set testing (47), priority dispatching rule (47), generating training data (47), opt mwr cma (47), optimal solution trajectory (47), shop scheduling problem (47), trajectory sampling strategy (47), most work remaining (47), statistical difference (40), opt opt (40)
Abstract:	A supervised learning approach to generating composite linear priority dispatching rules for scheduling is studied. In particular we investigate a number of strategies for generating training data for learning a linear dispatching rule using preference learning. The results show that generating training data set from optimal solutions only is not as effective as when suboptimal solutions are added to the set. Furthermore, different strategies for creating preference pairs is investigated as well as sub-optimal solution trajectories. The different strategies are investigates on some 2000 randomly generated problem instances using two different problems generator settings.
Time:	Oct 28, 11:45 GMT

Authors

first name	last name	email	country	organization	Web site	corresponding?
Helga	Ingimundardottir	hei2@hi.is	Iceland	University of Iceland	http://www.hi.is/~hei2	✓
Thomas Philip	Runarsson	tpr@hi.is	Iceland	University of Iceland		✓

Reviews

Review 2

Overall evaluation: **2**: (accept)

Review: This paper presents an interesting analysis of the importance of considering suboptimal solution trajectories when generating training data for learning a linear dispatching rule using preference learning. This study is performed in the context of supervised learning for generating composite linear priority dispatching rules for the job-shop scheduling problem.

I found the paper interesting and rather well-written, but I noticed a large number of typos. The paper shoulf be proofread carefully.

Review 1

Overall evaluation: **1**: (weak accept)

The paper presents a methodology for the generation of training data to be used in supervised learning of dispatching rules for scheduling systems.
Training data is created according to different strategies and criteria and evaluated accordingly

Training data is created according to different strategies and extend and evaluated accordingly to a given performance measure.
The experimental results provide evidence of the benefit of adding sub-optimal solutions to the training set apart from optimal ones.

In general my main perplexity concerns the readability of the paper which contains many minor errors (see section on minor comments) which I suggest to correct in order to make it more clear.
From the technical point of view I see a potential limitation of the work in having adopted a scheme where only a combination (mxn) of the JSP has been tested (namely a 6x5 instance). It would have been interesting (and meaningful, in my opinion) to see how the proposed approach behaves on a set of problems with different size.

Minor comments:
abstract: please change "The different strategies are investigates on some 2000 randomly generated problem instances" with "The different strategies are investigated on 2000 randomly generated problem instances".

Review: pag. 1: I would suggest to rephrase "The features may correspond to a dispatching rule, for example the single feature phi_1(xj) would correspond be the work remaining heuristic if h(xj) > h(xi), for_each i are jobs with less work remaining than job j" in order to make it clearer.

pag. 2: please indicate what acronyms LPT and MWR stand for.
please change "The paper first illustrated how the JSP" with "The paper first illustrates how the JSP"

pag. 5: I would suggest to rephrase "Defining the size of the preference set as l = |S| (cf. [3])." as I found it of difficult interpretation.
Please also change "If l is too large, then re-sampling may need to be done in order.." with "If l is too large, then re-sampling may be needed to be done in order..."

pag. 6 I found the first sentence of section 4 meaningless. Should it be together with the second one? Or not? Please change it accordingly.

pag. 7 A verb lacks in the first sentence of the page.

pag. 9 What does (cf. Fig 4 and 4) mean?

pag. 11 Please change "the training data will be generate with..." with "the training data will be generated with.."